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Mineral Industry Surveys

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CHROMIUM IN NOVEMBER 2004

On the basis of gross weight, consumption of chromium ferroalloys and metal in November 2004 decreased slightly compared with consumption in October 2004, according to the U.S. Geological Survey.

Included in this Mineral Industry Surveys are U.S. salient chromium statistics, U.S. government stockpile inventory of chromium materials in November 2004, consumption by end use and consumer stocks of chromium ferroalloys and metal at the end of November 2004, U.S. foreign trade data for selected chromium-containing materials in October 2004, and chromite ore prices.

Update

The Defense National Stockpile Center (DNSC) announced the sale of 9,072 metric tons (t) of ferrochromium in December comprising 8,165 t of high-carbon ferrochromium and 907 t of low-carbon ferrochromium. The sale was valued at $8.4 million or $0.42 per pound-gross weight (Defense National Stockpile Center, 2005). DNSC also reported the sale of 427 t of chromium metal valued at $2,029,990 or $2.15 per pound on average (Defense National Stockpile Center, 2004). The chromium metal sale exhausted the chromium metal for sale in fiscal year 2005 (October 1, 2004-September 30, 2005).

References Cited

Defense National Stockpile Center, 2004, Stockpile accepts chromium metal bids: Defense National Stockpile Center, News Release DNSC-05-2546, December 22, 1 p.

Defense National Stockpile Center, 2005, Stockpile announces ferrochromium sales for December 2004: Defense National Stockpile Center, News Release DNSC-05-2544, January 5, 1 p.

TABLE 1
U.S. SALIENT CHROMIUM STATISTICS[1]

(Metric tons, gross weight)

	2003	2004					
	January-December[2]	August	September	Third quarter	October	November	January-November[2]
Production:							
Stainless steel production[3]	2,210,000	220,000	175,000	584,000	202,000	205,000	2,160,000 [4]
Components of U.S. supply:							
Stainless steel scrap receipts	757,000	63,300	63,200	189,000	64,800 [r]	59,200	721,000
Stainless steel scrap consumption	1,070,000	96,200	86,500	275,000	97,400 [r]	88,800	1,030,000
Imports for consumption:							
Chromite ore	173,000	20,200	4,600	25,200	12,600	NA	105,000 [5]
Ferrochromium:							
More than 4% carbon	366,000	54,600	13,300	90,000	56,600	NA	323,000 [5]
More than 3% carbon but not more than 4% carbon	--	20	10	30	--	NA	30 [5]
More than 0.5%, but not more than 3% carbon	5,340	1,090	551	1,660	571	NA	5,560 [5]
Not more than 0.5% carbon	19,500	3,530	1,800	6,450	4,510	NA	27,700 [5]
Ferrochromium silicon	38,700	3,870	532	4,400	3,640	NA	24,400 [5]
Total ferroalloy imports	429,000	63,100	16,200	103,000	65,400	NA	381,000 [5]
Chromium metal[6]	8,570	526	716	2,170	846	NA	8,140 [5]
Stainless steel	639,000	63,700	75,700	210,000	76,300	NA	644,000 [5]
Stainless steel scrap	89,200	12,400	9,300	30,500	10,400	NA	119,000 [5]
Distribution of U.S. supply:							
Consumption, industry, chromium ferroalloys and metal	420,000	37,600	34,600	109,000	36,500 [r]	35,800	396,000
Exports:							
Chromite ore	103,000	10,200	2,750	21,100	823	NA	41,900 [5]
Chromium ferroalloys:							
High-carbon ferrochromium	3,180	334	442	1,230	439	NA	5,650 [5]
Low-carbon ferrochromium	1,230	158	103	370	127	NA	1,110 [5]
Ferrochromium silicon	481	41	161	349	--	NA	1,130 [5]
Total ferroalloy exports	4,890	533	706	1,950	565	NA	7,890 [5]
Chromium metal	941	93	53	246	58	NA	834 [5]
Stainless steel	327,000	23,100	22,900	73,600	30,400	NA	274,000 [5]
Stainless steel scrap	505,000	31,100	34,800	101,000	48,200	NA	405,000 [5]
Stocks at end of period:							
Consumer, industry, chromium ferroalloys and metal	16,700	11,200	11,900	XX	11,200 [r]	11,500	XX
Government stockpile:							
Chromite ore	154,000	--	--	XX	--	--	XX
Chromium ferroalloys	683,000	619,000	601,000	XX	596,000	589,000	XX
Chromium metal	6,660	6,670	6,670	XX	6,670	6,670	XX

[r]Revised. NA Not available. XX Not applicable. -- Zero.

[1]Data are rounded to no more than three significant digits; may not add to totals shown.

[2]May contain revised data.

[3]Data on stainless steel production reported by American Iron and Steel Institute; monthly, quarterly, and year-to-date production of stainless and heat-resisting raw steel.

[4]Includes revised data that is not broken out by specific month.

[5]Includes January through October data; November data not available.

[6]Includes waste and scrap and other.

TABLE 2

U.S. REPORTED CONSUMPTION AND STOCKS OF CHROMIUM PRODUCTS IN 2004[1]

(Metric tons, gross weight unless otherwise noted)

	October	November	January-November[2]
Consumption by end use:			
Alloy uses:			
Iron alloys:			
Steel:			
Carbon steel	433	388	3,850
High-strength low-alloy steel	647	637	7,050
Stainless and heat-resisting steel	31,700 r	31,000	343,000
Full alloy steel	1,590	1,640	17,000
Electrical steel	W	W	W
Tool steel	445	417	5,140
Unspecified Steel	W	W	W
Cast irons	W	W	W
Superalloys	745	733	8,130
Other alloys[3]	37	46	676
Total	36,500 r	35,800	396,000
Total, chromium content	21,100 r	20,600	231,000
Consumption by material:			
Low-carbon ferrochromium	2,010 r	1,910	21,600
High-carbon ferrochromium	30,900	30,500	335,000
Ferrochromium silicon	3,080 r	2,850	32,700
Chromium metal	371	358	4,160
Chromite ore	W	W	W
Chromium-aluminum alloy	29	31	347
Other chromium materials	W	W	W
Total	36,500 r	35,800	396,000
Total, chromium content	21,100 r	20,600	231,000
Consumer stocks:			
Low-carbon ferrochromium	1,870	1,950	XX
High-carbon ferrochromium	7,910 r	8,080	XX
Ferrochromium silicon	1,180 r	1,230	XX
Chromium metal	195	184	XX
Chromite ore	W	W	XX
Chromium-aluminum alloy	26	28	XX
Other chromium materials	W	W	XX
Total	11,200 r	11,500	XX
Total, chromium content	6,590 r	6,730	XX

[r]Revised. W Withheld to avoid disclosing company proprietary data; included in "Total." XX Not applicable.

[1]Data are rounded to no more than three significant digits; may not add to totals shown.

[2]May include revised data.

[3]Includes welding and alloy hard-facing rods and materials; wear- and corrosion-resistant alloys; and aluminum, copper, magnetic, nickel, and other alloys.

TABLE 3
U.S. GOVERNMENT STOCKPILE INVENTORY OF CHROMIUM MATERIALS[1, 2]

(Metric tons)

Period	Chromite ore		Chromium ferroalloys		Chromium metal
	Chemical	Refractory	High-carbon ferro-chromium	Low-carbon ferro-chromium	
2003:					
November	71,500	82,600	472,000	217,000	7,120
December	71,500	82,600	466,000	217,000	6,660
2004:					
January	--	82,600	462,000	215,000	6,660
February	--	82,100	453,000	212,000	6,660
March	--	82,100	453,000	212,000	6,660
April	--	--	436,000	209,000	6,660
May	--	--	430,000	208,000	6,660
June	--	--	425,000	208,000	6,660
July	--	--	414,000	208,000	6,670
August	--	--	412,000	206,000	6,670
September	--	--	408,000	192,000	6,670
October	--	--	404,000	192,000	6,670
November	--	--	398,000	191,000	6,670

-- Zero.

[1]Data are rounded to no more than three significant digits.

[2]These Government stocks are reported by the Defense National Stockpile Center in Inventory of Stockpile Materials R-1, which reports uncommitted inventory. Uncommitted inventory is that inventory for which there is no sales contract. Committed inventory is that inventory for which there is a sales contract, however, the material has not yet been shipped. For chromium materials, the R-1 report includes chromium materials that (1) meet specifications and are held in excess of goal and (2) do not meet specifications and are held in excess of goal. The R-1 report excludes chromium materials that are committed and awaiting shipment.

Source: Defense National Stockpile Center.

TABLE 4
U.S. EXPORTS OF CHROMITE ORE, CHROMIUM FERROALLOYS, AND METAL[1]

Period	Chromite ore		Chromium ferroalloys[2]			Chromium metal[3]	
	Gross weight (metric tons)	Value (thousands)	Gross weight (metric tons)	Chromium content (metric tons)	Value (thousands)	Gross weight (metric tons)	Value (thousands)
2003:							
October	1,030	$214	393	208	$485	72	$1,350
November	634	194	462	262	502	152	2,120
December	54,600	4,090	502	285	548	65	958
January-December	103,000	7,410	4,890	2,830	5,240	941	11,900
2004:							
January	223	74	583	344	767	76	1,520
February	2,510	548	685	409	1,040	76	1,660
March	938	290	2,440	1,400	2,940	54	1,710
April	1,340	359	623	348	735	69	2,230
May	3,920	480	370	198	443	177	1,850
June	11,000	1,570	671	362	931	79	1,400
July	8,180	2,130	713	398	1,000	100	1,570
August	10,200	2,680	533	322	685	93	1,510
September	2,750	1,590	706	401	876	53	1,290
October	823	270	565	347	799	58	1,190
January-October	41,900	9,990	7,890	4,530	10,200	834	15,900

[1]Data are rounded to no more than three significant digits; may not add to totals shown.

[2]Includes low-, medium-, and high-carbon ferrochromium and ferrochromium silicon.

[3]Includes chromium metal waste and scrap and unwrought powders.

Source: U.S. Census Bureau.

TABLE 5

U.S. IMPORTS FOR CONSUMPTION OF CHROMITE ORE, FERROCHROMIUM, AND CHROMIUM METAL[1]

(Metric tons)

	2003	2004			
	January-December[2]	August	September	October	January-October[2]
Chromite ore:					
Not more than 40% chromic oxide:					
Gross weight	77	--	--	--	--
Chromic oxide content	24	--	--	--	--
More than 40% but less than 46% chromic oxide:					
Gross weight	7,940	192	249	51	1,590
Chromic oxide content	3,370	87	111	23	717
46% or more chromic oxide:					
Gross weight	165,000	20,000	4,350	12,600	103,000
Chromic oxide content	77,400	9,910	2,240	5,900	49,300
Total, all grades:					
Gross weight	173,000	20,200	4,600	12,600	105,000
Chromic oxide content	80,800	10,000	2,350	5,920	50,000
Ferrochromium:					
Low-carbon:[3]					
Not more than 0.5%:					
Gross weight	19,500	3,530	1,800	4,510	27,700
Chromium content	13,300	2,400	1,180	2,820	18,500
More than 0.5% but not more than 3%:					
Gross weight	5,340	1,090	551	571	5,560
Chromium content	3,420	708	348	363	3,720
Total, low-carbon:					
Gross weight	24,900	4,620	2,350	5,080	33,200
Chromium content	16,800	3,110	1,520	3,190	22,200
Medium-carbon:[4]					
Gross weight	--	20	10	--	30
Chromium content	--	10	5	--	16
High-carbon:[5]					
Gross weight	366,000	54,600	13,300	56,600	323,000
Chromium content	210,000	32,800	6,860	32,900	182,000
Total, all grades:					
Gross weight	391,000	59,200	15,600	61,700	356,000
Chromium content	227,000	35,900	8,390	36,100	204,000
Chromium metal:					
Unwrought powders	1,810	78	166	25	1,160
Waste and scrap	284	--	10	8	59
Other than waste and scrap amd unwrought powders	6,480	448	540 [r]	812	6,910
Total, all grades	8,570	526	716	846	8,140

[r]Revised. -- Zero.

[1]Data are rounded to no more than three significant digits; may not add to totals shown.

[2]May include revised data.

[3]Ferrochromium containing not more than 3% carbon.

[4]Ferrochromium containing more than 3% carbon but not more than 4% carbon.

[5]Ferrrochromium containing more than 4% carbon.

Source: U.S. Census Bureau.

TABLE 6

U.S. IMPORTS FOR CONSUMPTION OF FERROCHROMIUM IN 2004, BY GRADE AND BY COUNTRY[1]

Grade and country	October			January-October[2]		
	Gross weight (metric tons)	Chromium content (metric tons)	Value[3] (thousands)	Gross weight (metric tons)	Chromium content (metric tons)	Value[3] (thousands)
High-carbon ferrochromium:[4]						
India	--	--	--	12,900	8,110	$10,400
Kazakhstan	15,700	10,900	$15,800	72,200	50,000	69,600
Russia	2,540	1,920	1,900	7,250	5,000	5,960
South Africa	29,200	14,600	18,600	195,000	97,400	114,000
Zimbabwe	9,270	5,510	5,940	36,100	21,400	22,600
Total	56,600	32,900	42,200	323,000	182,000	223,000
Medium-carbon ferrochromium[5], South Africa	--	--	--	30	16	18
Low-carbon ferrochromium:[6]						
More than 0.5% but not more than 3% carbon:						
China	--	--	--	20	9	42
Germany	--	--	--	63	44	72
Kazakhstan	--	--	--	2,020	1,400	3,520
Russia	231	160	264	1,930	1,330	2,570
South Africa	340	204	365	1,520	927	1,780
Total	571	363	629	5,560	3,720	7,990
Not more than 0.5% carbon:						
China	25	17	48	174	113	300
Germany	440	310	921	3,840	2,720	6,740
Japan	180	125	417	1,800	1,270	4,140
Kazakhstan	400	259	625	670	448	977
Mexico	--	--	--	4	2	7
Russia	1,500	1,050	2,010	16,100	11,100	22,200
South Africa	1,950	1,060	1,740	4,970	2,720	4,240
Sweden	--	--	--	19	14	63
Turkey	15	9	29	131	90	254
Total	4,510	2,820	5,790	27,700	18,500	39,000
All grades:						
China	25	17	48	194	122	342
Germany	440	310	921	3,910	2,770	6,810
India	--	--	--	12,900	8,110	10,400
Japan	180	125	417	1,800	1,270	4,140
Kazakhstan	16,100	11,200	16,400	74,900	51,900	74,100
Mexico	--	--	--	4	2	7
Russia	4,280	3,120	4,170	25,200	17,400	30,800
South Africa	31,400	15,800	20,700	201,000	101,000	120,000
Sweden	--	--	--	19	14	63
Turkey	15	9	29	131	90	254
Zimbabwe	9,270	5,510	5,940	36,100	21,400	22,600
Total	61,700	36,100	48,700	356,000	204,000	270,000

-- Zero.

[1]Data are rounded to no more than three significant digits; may not add to totals shown.

[2]May include revised data.

[3]Customs import value generally represents a value in the foreign country and therefore excludes U.S. import duties, freight, insurance, and other charges incurred in bringing the merchandise into the United States.

[4]Ferrochromium containing more than 4% carbon.

[5]Ferrochromium containing more than 3% carbon but no more than 4% carbon.

[6]Ferrochromium containing more than 4% carbon.

Source: U.S. Census Bureau.

TABLE 7

U.S. IMPORTS FOR CONSUMPTION OF CHROMIUM METAL IN 2004, BY GRADE AND BY COUNTRY[1]

Grade and country	October		January-October[2]	
	Gross weight (metric tons)	Value[3] (thousands)	Gross weight (metric tons)	Value[3] (thousands)
Unwrought powders:				
China	--	--	240	$981
France	--	--	6	31
Germany	--	--	63	346
Japan	25	$376	188	2,280
Russia	--	--	527	2,570
Spain	--	--	121	405
Taiwan	--	--	15	21
United Kingdom	--	--	3	358
Total	25	376	1,160	6,990
Waste and scrap:				
Germany	2	22	4	43
Japan	7	70	38	333
Singapore	--	--	11	76
Sweden	--	--	2	6
Taiwan	--	--	4	23
Total	8	92	59	481
Other than waste and scrap and unwrought powders:				
Austria	--	--	(4)	5
China	20	95	1,400	5,670
France	181	1,200	1,460	10,500
Germany	(4)	8	21	505
Japan	3	4	5	72
Liechtenstein	--	--	(4)	10
Mexico	--	--	3	9
Netherlands	--	--	7	34
Russia	311	2,120	2,040	10,100
Spain	--	--	(4)	20
Switzerland	--	--	(4)	35
Taiwan	--	--	2	15
United Kingdom	296	1,700	1,980	11,000
Total	812	5,130	6,910	38,000
All grades:				
Austria	--	--	(4)	5
China	20	95	1,640	6,650
France	181	1,200	1,470	10,500
Germany	2	30	88	894
Japan	35	450	232	2,680
Liechtenstein	--	--	(4)	10
Mexico	--	--	3	9
Netherlands	--	--	7	34
Russia	311	2,120	2,570	12,700
Singapore	--	--	11	76
Spain	--	--	121	424
Sweden	--	--	2	6
Switzerland	--	--	(4)	35
Taiwan	--	--	21	60
United Kingdom	296	1,700	1,980	11,300
Total	846	5,600	8,140	45,400

-- Zero.

[1]Data are rounded to no more than three significant digits; may not add to totals shown.

[2]May include revised data.

[3]Customs import value generally represents a value in the foreign country and therefore excludes U.S. import duties, freight, insurance, and other charges incurred in bringing the merchandise into the United States.

[4]Less than 1/2 unit.

Source: U.S. Census Bureau.

TABLE 8

U.S. TRADE OF STAINLESS STEEL, BY PRODUCT, IN 2004[1]

Stainless steel product	October		January-October	
	Gross weight (metric tons)	Value[2] (thousands)	Gross weight (metric tons)	Value[2] (thousands)
Exports:				
Ingot	5,540	$12,800	11,800	$40,200
Flat-rolled (width > 600 mm)	9,710	26,200	124,000	301,000
Flat-rolled (width < 600 mm)	8,900	26,600	80,200	239,000
Bars and rods in irregular coils	414	993	3,370	11,100
Other bars and rods	2,440	12,500	19,400	103,000
Wire	882	5,710	7,150	47,700
Tubes, pipes, hollow profiles	2,550	14,500	28,300	135,000
Total	30,400	99,400	274,000	876,000
Stainless steel scrap	48,200	53,600	405,000	457,000
Grand total	78,700	153,000	679,000	1,330,000
Imports:				
Ingot	16,400	38,700	138,000	299,000
Flat-rolled (width > 600 mm)	34,300	86,500	279,000	643,000
Flat-rolled (width < 600 mm)	4,860	15,300	35,000	115,000
Bars and rods in irregular coils	4,430	11,400	34,500	82,800
Other bars and rods	5,910	20,300	54,900	169,000
Wire	3,510	13,100	31,400	116,000
Tubes, pipes, hollow profiles	6,880	33,200	70,500	321,000
Total	76,300	219,000	644,000	1,750,000
Stainless steel scrap	10,400	11,200	119,000	138,000
Grand total	86,700	230,000	763,000	1,880,000

[1]Data are rounded to no more than three significant digits; may not add to totals shown.

[2]Export value is free alongside ship (f.a.s.). Import value is Customs import value, which generally represents a value in the foreign country and therefore excludes U.S. import duties, freight, insurance, and other charges incurred in bringing the merchandise into the United States.

Source: U.S. Census Bureau.

TABLE 9
CHROMITE ORE PRICES

(Dollars per metric ton, gross weight unless otherwise noted)

Week ending	Turkey[1]		South Africa[2]				Philippines[3]
	1	2	1	2	3	4	
2003:							
10/03	90	100	40 - 50	50 - 70	100 - 120	40 - 50	125 - 145
10/10	90	100					
10/17	90	100					
10/24	90	100					
10/31	90	105					
11/07	95	110	40 - 50	50 - 70	100 - 120	40 - 50	125 - 145
11/14	95	110					
11/21	95	110					
11/28	NA	NA					
12/05	100	120	50 - 65	80 - 90	100 - 120	50 - 60	125 - 145
12/12	100	120					
12/19	120	140					
12/26	NA	NA					
2004:							
01/02	NA	NA	50 - 60	80 - 90	100 - 120	50 - 60	125 - 145
01/09	125	150					
01/16	125	150					
01/23	135	155					
01/30	135	155					
02/06	135	155	50 - 65	80 - 90	100 - 120	50 - 60	125 - 145
02/13	135	155					
02/20	135	155					
02/27	135	155					
03/05	135	155	60 - 80	80 - 100	100 - 120	50 - 60	125 - 145
03/12	135	155					
03/19	135	155					
03/26	135	155					
03/05	135	155	60 - 80	80 - 100	100 - 120	50 - 60	125 - 145
03/12	135	155					
03/19	135	155					
03/26	135	155					
04/02	135	155	75 - 100	100 - 120	100 - 120	65 - 70	125 - 145
04/09	135	155					
04/16	135	155					
04/23	130	150					
04/30	130	150					
05/07	130	150	75 - 100	100 - 120	100 - 120	65 - 70	125 - 145
05/14	125	145					
05/21	120	140					
05/28	120	140					
06/04	120	140	80 - 110	120 - 140	100 - 120	70 - 90	125 - 145
06/11	120	140					
06/18	115	130					
06/25	115	130					
07/02	115	130	80 - 110	120 - 140	100 - 120	70 - 90	125 - 145
07/09	115	130					
07/16	115	130					
07/23	120	135					
07/30	120	135					

See footnotes at end of table.

TABLE 9--Continued
CHROMITE ORE PRICES

(Dollars per metric ton, gross weight unless otherwise noted)

Week ending	Turkey[1]		South Africa[2]				Philippines[3]
	1	2	1	2	3	4	
2004:							
08/06	120	135	85 - 120	125 - 150	100 - 120	75 - 95	125 - 145
08/13	120	135					
08/20	120	135					
08/27	120	135					
09/03	120	135	85 - 120	125 - 150	100 - 120	75 - 95	125 - 145
09/10	120	135					
09/17	120	135					
09/24	120	135					
10/01	120	135	85 - 120	125 - 150	100 - 120	75 - 95	125 - 145
10/08	120	135					
10/15	120	135					
10/22	120	135					
10/29	120	135					
11/05	120	135	85 - 120	125 - 150	100 - 120	75 - 95	125 - 145
11/12	120	135					
11/19	120	135					
11/26	120	135					
12/03	120	135	85 - 125	130 - 150	100 - 120	75 - 95	125 - 145
12/10	130	145					
12/17	130	145					
12/24	NA	NA					
12/31	NA	NA					

NA Not available.

[1]Turkish 1 (T1) is called 38% - 40% Cr_2O_3 by Ryan's Notes (RN); T2 is called 44% Cr_2O_3 by RN.

[2]South African 1 (SA1) is called chemical grade, 46% Cr_2O_3, wet bulk, free-on-board (f.o.b.) by Industrial Minerals (IM); SA2 is called foundry grade, 46% Cr_2O_3, wet bulk, f.o.b. by IM; SA3 is called refractory grade, 46% Cr_2O_3, wet bulk, f.o.b. by IM; SA4 is called metallurgical grade, friable lumpy, 40% Cr_2O_3 by IM.

[3]Philippines is called refractory grade, concentrates, f.o.b. by IM.